REMARKS

In the Office Action dated January 24, 2005, claims 1-10 and 14-20 were rejected under 35 U.S.C. §103(a) as being unpatentable over Levine (United States Patent No. 6,473,645). Claims 11-13 were stated to be allowable if rewritten in independent form.

The above rejection is respectfully traversed, and therefore claims 11-13 have been retained in dependent form at this time. In the implantable heart stimulator, the implantable heart stimulating system and the method for bi-ventricular stimulation and sensing of a heart disclosed and claimed in the present application, a control circuit operates to temporarily modify delivery of pacing pulses by a second pacing circuit (that paces a second of the ventricles of the heart) so that no pacing pulse is delivered by this second pacing circuit during a time interval (the first time interval) that follows a pacing pulse delivered by the first pacing circuit (that paces a first of the ventricles). As explained in the last paragraph at page 5 of the present specification, since no pacing pulse is delivered by the second pacing circuit during the first time interval, no pacing pulse from the second circuit will interfere with the sensing of an evoked response during the first time interval. Consequently, it is possible to detect whether an evoked response is sensed during the first time interval. As explained in the paragraph bridging pages 2 and 3 of the present specification, this solution is in response to the problem that exists with regard to the detection of capture, namely that different signals from the heart or signals generated by the pacemaker, may interfere with the detection of capture, if those signals are present at a time when an attempt is being made to detect an evoked response following a pacing pulse.

Inhibiting delivery of a pacing pulse by the second pacing circuit during the first time interval, therefore, is not undertaken in accordance with the invention in response to any type of sensing or response detection, but is spontaneously undertaken by the control circuit. Independent claims 1, 16 and 18 have been amended to explicitly state that the aforementioned inhibition of the delivery of a pacing pulse by the second pacing circuit during the first time interval occurs spontaneously. The term "spontaneously" is used in accordance with its normal dictionary definition when applied to inanimate objects, meaning "controlled and directed internally." Of course, some type of instruction or trigger must exist in the control unit, such as by programming, in order to cause the control unit to operate in this manner. The use of the term "spontaneously" is intended to mean that whatever this instruction or trigger is, it occurs internally within the control circuit, and does not arise from some source external to the control unit.

In the method and system disclosed in the Levine patent, it is possible that stimulation of one of the ventricles could be inhibited in a time frame that occurs after stimulation of the other ventricle. In the Levine reference, however, if such inhibition occurs, it is solely as the result of some type of sensing or detection, as is clear from the flow charts shown in Figures 7, 8 and 9 of the Levine patent. The blocks in those flow charts that designate inhibition of stimulation either in the right ventricle or in the left ventricle proceed exclusively as the result of a "yes" answer to the question" R-wave detected in RV?" or "R-wave detected in LV?".

The control unit in the Levine reference, therefore, does not spontaneously inhibit stimulation in either the right ventricle or the left ventricle, but does so only in response to the detection of an R-wave.

Moreover, the Levine reference does not attempt to address the problem to which the heart stimulator, heart stimulator system and method of the present invention are directed, namely problems associated with the detection itself. The Levine reference proceeds on the assumption that such detection will proceed accurately and without problems at all times (other than recognizing the well known fact that it is not meaningful to attempt to sense any chamber of the heart in the refractory time).

In the paragraph bridging pages 2 and 3 of the Office Action, the Examiner stated that one of ordinary skill in the art would have found it obvious to modify the delivery of left ventricle pacing upon detecting a signal indicative of an absence of capture by the right ventricle, and cited teachings in the Levine reference to support this position. The above discussion should make clear, however, that inhibiting pacing of one ventricle upon detecting a signal indicative of an absence of capture in the other ventricle is *not* what is being claimed in the independent claims of the present application. Therefore, regardless of the teachings of Levine on this point cited by the Examiner, that point is irrelevant to the subject matter of the independent claims of the present application, and therefore the teachings of Levine on that point are equally irrelevant.

All claims of the application are therefore submitted to be in condition for allowance, and early reconsideration of the application is respectfully requested.

Submitted by,

Steven H. Noll (Reg. 28,982)

SCHIFF, HARDIN LLP
CUSTOMER NO. 26574
Patent Department
6600 Sears Tower
233 South Wacker Drive
Chicago, Illinois 60606
Telephone: 312/258-5790
Attorneys for Applicants.

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